

Reply to Office Action of October 19, 2005
Amendment Dated: February 14, 2006

Appl. No.: 10/708,902
Attorney Docket No.: H0006030

Listing of Claims

1 Claim 1 (Previously Amended): A tracking system to track the location of a plurality
2 of assets of interest, said tracking system comprising:
3 a set of asset badges, wherein each of said set of asset badges is attached to a
4 corresponding one of a first set of assets and transmits a corresponding badge identifier;
5 a plurality of intelligent badges, wherein each of said plurality of intelligent badges
6 is attached to a corresponding one of a second set of assets and transmits a corresponding
7 badge identifier, wherein said first set of assets and said second set of assets are comprised
8 in said plurality of assets;
9 each of said plurality of intelligent badges receiving a corresponding one of a plurality
10 of sets of badge identifiers, each of said plurality of intelligent badges sending said
11 corresponding one of a plurality of sets of badge identifiers associated with a badge identifier
12 of the intelligent badge, wherein the badge identifiers in each set are sent together associated
13 with the badge identifier of the intelligent badge even if the badge identifiers in the set are
14 received at different time instances; and
15 a processing system receiving and processing said plurality of sets of badge identifiers
16 and corresponding identifiers of said intelligent badges to determine a location of each of said
17 plurality of assets of interest.

1 Claim 2 (Previously Amended): The tracking system of claim 16, further comprising
2 a reader receiving each of said plurality of sets of badge identifiers and said associated badge
3 identifier from a corresponding one of said plurality of intelligent badges, said reader sending
4 said plurality of sets of badge identifiers and said associated badge identifiers to said
5 processing system, wherein said reader is associated with a reader zone, said reader zone
6 containing said intelligent physical zones.

1 Claim 3 (Previously Amended) The tracking system of claim 2, wherein a first set of
2 badge identifiers and a second set of badge identifiers contain at least one common badge
3 identifier, wherein said processing system determines said physical location of a common
4 badge by identifying said at least one common badge identifier, wherein said first set and said

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Appl. No.: 10/708,902
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5 second set are received from different intelligent badges and comprised in said plurality of
6 sets of badge identifiers.

1 Claim 4 (Previously Amended): The tracking system of claim 3, further comprising
2 a reference badge positioned at a known location in an area where said plurality of assets are
3 located, wherein said reference badge also transmits a reference badge identifier, wherein a
4 first intelligent badge contained in said plurality of intelligent badges receives said reference
5 badge identifier and sends said reference badge identifier to said processing system via said
6 reader, wherein said processing system determines the physical location of a first intelligent
7 physical zone of said first intelligent badge, and thus the location of each of said plurality of
8 assets relative to said known location.

1 Claim 5 (Original): The tracking system of claim 4, wherein each of said set of asset
2 badges sends the corresponding identifier in both a radio-frequency (RF) signal and an
3 infrared (IR) signal, wherein the identifier encoded in said RF signal is received by said
4 reader and the identifier encoded in said IR signal is received by one or more of said plurality
5 of intelligent badges.

1 Claim 6 (Previously Amended): The tracking system of claim 3, further comprising:
2 a set of component badges, wherein said set of component badges are attached to
3 corresponding one of a fourth set of assets; and
4 a set of active badges, wherein each of said set of active badges is attached to a
5 corresponding one of a third set of assets, wherein said third set of assets and said fourth set
6 of assets are contained in said plurality of assets,
7 wherein a first active badge receives a set of component badge identifiers from said
8 set of component badges, wherein said set of component badge identifiers and a first active
9 badge identifier is sent by said first active badge to a first intelligent badge contained in said
10 plurality of intelligent badges, wherein said first active badge identifier identifies said first
11 active badge and said first active badge is contained in said set of active badges,

Reply to Office Action of October 19, 2005
Amendment Dated: February 14, 2006

Appl. No.: 10/708,902
Attorney Docket No.: H0006030

12 wherein said processing system receives said first active badge identifier associated
13 with said set of component badge identifiers from said first intelligent badge, said processing
14 system determining the location of said first active badge by treating said first active badge
15 identifier similar to each of said badge identifiers of said asset badges, wherein the
16 approximate location of each of said fourth set of assets is same as the location of said first
17 active badge, wherein said processing system determines the location of said set of
18 component badges with reduced computational complexity.

1 Claim 7 (Original): The tracking system of claim 2, wherein each of said plurality of
2 sets of badge identifiers comprises the identifier of one of said intelligent badge or said
3 plurality of asset badges.

1 Claim 8 (Original): The tracking system of claim 2, wherein an intelligent badge is
2 attached to each of said plurality of assets of interest such that said relative location is
3 determined with more precision.

1 Claim 9 (Previously Amended): A computer readable medium carrying one or more
2 sequences of instructions for causing a processing system to determine a physical location of
3 each of a plurality of assets, wherein each of a set of asset badges is attached to a
4 corresponding one of a set of assets, wherein each of a plurality of intelligent badges is
5 attached to a corresponding asset, wherein said corresponding asset and said set of assets are
6 comprised in said plurality of assets, each of said plurality of intelligent badges being
7 associated with a corresponding intelligent physical zone, each of said plurality of intelligent
8 badges receiving a corresponding one of a plurality of sets of badge identifiers, the set of
9 badge identifiers received by an intelligent badge corresponding to asset badges located in
10 the intelligent physical zone of the intelligent badge, each of said plurality of intelligent
11 badges sending said corresponding one of a plurality of sets of badge identifiers associated
12 with a badge identifier of the intelligent badge, wherein execution of said one or more
13 sequences of instructions by one or more processors contained in said processing system
14 causes said one or more processors to perform the actions of:

Reply to Office Action of October 19, 2005
Amendment Dated: February 14, 2006

Appl. No.: 10/708,902
Attorney Docket No.: H0006030

15 receiving said plurality of sets of badge identifiers and corresponding identifiers of
16 said plurality of intelligent badges, wherein the badge identifiers in each set are received
17 together associated with the badge identifier of the intelligent badge; and
18 examining said plurality of sets of badge identifiers and corresponding identifiers of
19 said plurality of intelligent badges to determine said relative physical location of each of said
20 plurality of assets of interest as being in one or more of said intelligent physical zones.

1 Claim 10 (Previously Amended): The computer readable medium of claim 9, wherein
2 a first set of badge identifiers and a second set of badge identifiers contain at least one
3 common badge identifier, wherein said processing system determines said physical location
4 of a common badge by identifying said at least one common badge identifier, wherein said
5 first set and said second set are comprised in said plurality of sets of badge identifiers.

1 Claim 11 (Previously Amended): A method of tracking the location of a plurality of
2 assets of interest, said method comprising:

3 attaching each of a set of asset badges to a corresponding one of a first set of assets,
4 wherein each of said set of asset badges transmits a corresponding badge identifier;

5 attaching each of a plurality of intelligent badges to a corresponding one of a second
6 set of assets, wherein each of said plurality of intelligent badges also transmits a
7 corresponding badge identifier, wherein said first set of assets and said second set of assets
8 are comprised in said plurality of assets;

9 receiving each of a plurality of sets of badge identifiers in a corresponding one of said
10 plurality of intelligent badges;

11 transmitting from each intelligent badge a corresponding one of said plurality of sets
12 of badge identifiers along with a badge identifier of the intelligent badge, wherein the badge
13 identifiers in each set are sent together associated with the badge identifier of the intelligent
14 badge even if the badge identifiers in the set are received at different time instances; and

15 processing in a processing system said plurality of sets of badge identifiers and
16 corresponding identifiers of said intelligent badges to determine a location of each of said
17 plurality of assets of interest.

Reply to Office Action of October 19, 2005
Amendment Dated: February 14, 2006

Appl. No.: 10/708,902
Attorney Docket No.: H0006030

1 Claim 12 (Previously Amended): The method of claim 11, wherein a first set of badge
2 identifiers and a second set of badge identifiers contain at least one common badge identifier,
3 wherein said processing determines said physical location by identifying said at least one
4 common badge identifier, wherein said first set and said second set are received from
5 different intelligent badges and comprised in said plurality of sets of badge identifiers.

1 Claim 13 (Previously Amended): The method of claim 12, further comprising
2 positioning a reference badge at a known location in an area where said plurality of assets are
3 located, wherein said reference badge also transmits a reference badge identifier, wherein a
4 first intelligent badge contained in said plurality of intelligent badges receives said reference
5 badge identifier and sends said reference badge identifier, wherein said processing determines
6 the physical location of each of said plurality of assets relative to said known location..

1 Claim 14 (Previously Amended): The method of claim 11, further comprising:
2 attaching each of a set of component badges to a corresponding one of a fourth set of
3 assets; and
4 a set of active badges, wherein each of said set of active badges is attached to a
5 corresponding one of a third set of assets, wherein said third set of assets and said fourth set
6 of assets are contained in said plurality of assets,
7 wherein a first active badge receives a set of component badge identifiers from said
8 set of component badges, wherein said set of component badge identifiers and a first active
9 badge identifier is sent by said first active badge to a first intelligent badge contained in said
10 plurality of intelligent badges, wherein said first active badge identifier identifies said first
11 active badge and said first active badge is contained in said set of active badges,
12 wherein said processing system receives said first active badge identifier associated
13 with said set of component badge identifiers from said first intelligent badge, said processing
14 system determining the location of said first active badge by treating said first active badge
15 identifier similar to each of said badge identifiers of said asset badges, wherein the
16 approximate location of each of said fourth set of assets is same as the location of said first

Reply to Office Action of October 19, 2005
Amendment Dated: February 14, 2006

Appl. No.: 10/708,902
Attorney Docket No.: H0006030

17 active badge, wherein said processing system determines the location of said set of
18 component badges with reduced computational complexity.

1 Claim 15 (Original): The method of claim 11, further comprising receiving in a reader
2 each of said plurality of sets of badge identifiers and said associated badge identifier from a
3 corresponding one of said plurality of intelligent badges, wherein said reader sends said
4 plurality of set of badge identifier to said processing system.

1 Claim 16 (Original): The tracking system of claim 1, wherein each of said plurality
2 of intelligent badges is associated with a corresponding intelligent physical zone, the set of
3 badge identifiers received by an intelligent badge corresponding to asset badges located in
4 the intelligent physical zone of the intelligent badge, wherein a physical location of each of
5 said set of badges is determined as being in one or more of said intelligent physical zones by
6 said processing of said processing system.

1 Claim 17 (Original): The tracking system of claim 2, wherein each of said asset badges
2 transmits corresponding badge identifier using a first type of signals suited for a first distance
3 range, and each of said plurality of intelligent badges sending said corresponding one of said
4 plurality of sets of badge identifiers associated with said badge identifier of the intelligent
5 badge using a second type of signals suited for a second distance range, wherein said second
6 distance range is more than said first distance range, and wherein said reader is located within
7 a distance of said second distance range from each of said plurality of intelligent badges.

1 Claim 18 (Original): The method of claim 11, wherein each of said plurality of
2 intelligent badges is associated with a corresponding intelligent physical zone, the set of
3 badge identifiers received by an intelligent badge corresponding to asset badges located in
4 the intelligent physical zone of the intelligent badge, wherein a physical location of each of
5 said set of badges is determined as being in one or more of said intelligent physical zones by
6 said processing of said processing system.

Reply to Office Action of October 19, 2005
Amendment Dated: February 14, 2006

Appl. No.: 10/708,902
Attorney Docket No.: H0006030

1 Claim 19 (Original): The method of claim 15, wherein each of said asset badges
2 transmits corresponding badge identifier using a first type of signals suited for a first distance
3 range, and each of said plurality of intelligent badges sending said corresponding one of said
4 plurality of sets of badge identifiers associated with said badge identifier of the intelligent
5 badge using a second type of signals suited for a second distance range, wherein said second
6 distance range is more than said first distance range, and wherein said reader is located within
 a distance of said second distance range from each of said plurality of intelligent badges.